DOCUMENT RESUME

ED 307 069 PS 018 028

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TITLE Early Gender-Role Stereotype Attributions: The Roles of Models' Physical Characteristics and Children's Gender Constancy.
SPONS AGENCY National Inst. of Mental Health (DHHS), Rockville, Md.
PUB DATE May 89
GRANT NIMH-5T32-MH-15780-09
NOTE 17p.; Paper presented at the Annual Meeting of the Midwestern Psychological Association (May 1989).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Attribution Theory; *Cognitive Development; Comprehension; Developmental Stages; *Physical Characteristics; *Preschool Children; Preschool Education; Sex Differences; *Sex Role; *Stereotypes
IDENTIFIERS *Gender Constancy

ABSTRACT

A total of 83 children of 27 to 63 months of age were interviewed in an effort to assess the importance of the children's understanding of gender constancy and their use of physical characteristics in making gender role stereotype attributions. It was hypothesized that young children would use stimulus models' sex to a greater extent than the models' physical attributes in attributing gender role stereotypes. It was predicted that the number of gender role stereotypes children accurately attributed would be significantly related to sex differences between the figures used in the attribution task, but not related to the physical or relative size of the stimulus or to the children's stage of gender constancy. Findings indicated that all children, but especially boys, correctly identified and attributed more gender role stereotypes based on the sex than on the relative size of stimulus figures. Children's stage of gender constancy understanding did not reliably predict children's gender role stereotype attribution activity. The pattern of findings suggests that young children are capable of gender-typed attributions well before they achieve a full sense of gender constancy understanding. (RH)

Early Gender-Role Stereotype Attributions: The Roles of Models' Physical Characteristics and Children's Gender Constancy

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PS 018028

This project was facilitated by funds received while the author was a National Institute of Mental Health Postdoctoral Fellow at the University of Denver; Grant 5T32 MH 15780-09. This support is gratefully acknowledged. This study was completed in partial fulfillment of the requirements for the degree of Master of Arts at Syracuse University. The author would like to thank the faculty and staff of the Tiny Tot, Jack & Jill, Little Learners II, Plymouth, and Upstate preschools for their assistance and cooperation. The author wish to recognize Constance Bergh and Tarek Talbot for their exceptional service in helping conductthe project. The author would also like to thank Denise Arehart, Joan Barth and Kathy Park for their editorial comments and recommendations on earlier drafts of this paper.
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RUNNING HEAD: STEREOTYPE ATTRIBUTIONS

Early Gender-Role Stereotype Attributions: The Roles of Models' Physical Characteristics and Gender Constancy

Traditional cognitive-developmental approaches to early gender-role development emphasize children's understanding of the permanence of sex as a crucial component of gender-role socialization[1] (Kohlberg, 1966; Kohlberg & Ullian, 1978; Ullian, 1976; 1981). According to cognitive-developmental accounts acquisition of gender constancy, thought to develop in parallel with other conservation skills around the age of seven years, is important because it purportedly forms the foundation for later gender-role attitudes (Kohlberg, 1966; Kohlberg & Ullian, 1978; Kohlberg & Zigler, 1967).

However, Kohlberg did acknowledge young children may exercise gender-role stereotypes prior to achieving a full understanding of gender constancy. Specifically, in addition to stressing the importance of gender constancy for older concrete operational children's gender-role development, previous cognitive-developmental approaches emphasize that the development of masculine and feminine gender-roles and attributes are linked to pre-gender constant children's association of sex-related body size differences with non-physical, social gender differences (Kohlberg, 1966; Kohlberg & Ullian, 1978; Ullian, 1976; 1981). Traditional cognitive-developmental approaches assert that young children's (i.e., four to six year olds') gender-role stereotypes of masculine dominance and social power develop largely out of stereotyping based on body size, age and competence (Kohlberg, 1966).

Accordingly, Kohlberg (1966) claims that pre-gender constant children do not distinguish between adults' physical and psychological attributes and that the fusion of these dimensions forms the basis for four to six year old children's conceptions of gender-role stereotypes (viz., Kohlberg & Ullian, 1978). For instance, Kohlberg explicitly states that "basic universal sex-role stereotypes develop early in young children. These stereotypes arise from the child's conceptions of body differences" (Kohlberg, 1966, p. 165). Other proponents of traditional cognitive-developmental/constructivist approaches to gender-role development have contended

"global anatomical attributes such as size... are equated with such psychological attributes as power and nurturance" (Ullian, 1981, p. 172).

Finally, cognitive-developmental approaches (e.g., Kohlberg & Ullian, 1978; Ullian, 1976; 1981) reiterate the contention that four to six year old children's failure to distinguish between concrete, physical attributes such as size and gender-related 'psychological' characteristics lies at the heart of the stereotyping process. Discussing gender-role stereotyping by a six year old first grader, Kohlberg and colleague explain that "for the young child sex-linked roles and attributes are linked to body attributes", "mental or psychological differences between the sexes [are] confused with the physical differences between men and women", "The young child does not distinguish between physical and psychological attributes. The tendency to derive psychological attributes and values from physical attributes is compounded by the child's categorical view of sex-role assignments" (Kohlberg & Ullian, 1978, pp. 212-214). Thus, consistent with earlier cognitive-developmental writings (e.g., Kohlberg, 1966; Kohlberg & Zigler, 1967), Kohlberg and colleague (1978) continue to maintain that pre-gender constant children initially base gender-typing judgments on physical sex differences and that four to six year olds fuse and confuse psychological and physical characteristics in attempting to understand sex and gender-role differences.

However, the major tenets of cognitive-developmental approaches to early gender-role development have recently begun to be questioned and assessed (Carter & Levy, 1988; Huston, 1983; Levy & Carter, in press; Martin & Halverson, 1987; Stangor & Ruble, 1987). Although researchers have observed that the appearance of gender constancy in young children is related to their general level of cognitive development and acquisition of conservation skills (e.g., Emmerich, Goldman, Kirsch, & Sharabany, 1977; Emmerich, 1984; Gouze & Nadelman, 1980; Kohlberg & Zigler, 1967; Marcus & Overton, 1978) an equally large amount of research has demonstrated that gender-role knowledge is quite high among pre-gender constant children and only minimal evidence exists linking acquisition of gender constancy, per se, to any gender-related phenomena (e.g., Carter & Levy, 1988; Carter,

et al, 1985; Levy & Carter, in press; Martin & Halverson, 1983; Serbin & Sprafkin, 1986; see Ruble & Stangor, 1986; Stangor & Ruble, 1987; for rebuttals).

Thus, although it is clear that the acquisition of gender constancy, per se, is related to the acquisition of other cognitive skills it is also evident that pre-gender constant children have substantial knowledge of gender-role stereotypes, the factors influencing the early acquisition and use of gender-role stereotypes remain unclearly outlined (Carter, 1987; Levy, 1988). Unlike the growing amount of research concerning the importance of gender constancy for gender-role development, to date no research has examined the traditional cognitive-developmental tenet that young, pre-gender constant children's gender-typing revolves around their fusing of concrete physical attributes and gender-related psychological characteristics.

The present study investigated the predictions of the cognitive-developmental approach to gender-role development regarding the importance of gender constancy understanding and children's use of physical attributes (i.e., relative physical size) in early gender-typing. It was hypothesized that, contrary to traditional cognitive-developmental approaches young children would use models' sex to a greater extent than models' physical/relative body size dimensions in attributing gender-role stereotypes. Specifically, it was predicted that the number of gender-role stereotypes children accurately attributed would be significantly related to: 1) sex differences between the figures used in the attribution task, and 2) would not be related to the physical/relative size of the stimulus figure, r 3) children's stage of gender constancy, particularly with the effects of children's age statistically controlled for (Ruble & Stangor, 1986).

Method

Subjects and Interviewers

Eighty-three 27 to 63 month-old white, middle-class boys (n = 44) and girls (n = 39) attending suburban day-care and nursery schools, participated. All children were interviewed individually. The session lasted approximately 15 to 25 minutes. Interviewers were two adult

males and two adult females. Each interviewer tested approximately equal numbers of boys and girls overall.

Interview and Materials

Gender Constancy Interview. The gender constancy interview was identical to the one employed by Carter & Levy (1988) and is a hybrid of gender constancy measures utilized in the past (e.g., Emmerich & Goldman, 1972; Emmerich et al., 1977; Slaby & Frey, 1975). The measure is described elsewhere (e.g., Carter & Levy, 1983; Levy & Carter, in press) and thus is not detailed here.

The interview consists of a total of thirteen questions and counter-questions. Children are asked to identify their own sex and the sex of a pictured figure (Level II: Gender Identification) to indicate their knowledge that gender does not change as a result of changes in play activities, desires, or appearance (Level III: Personal Gend Permanence) and that the sex of a pictured person does not change due to perceptual changes in activities, desire, or appearance (Level IV: Perceptual Gender Permanence). Children who fail to answer any questions correctly are considered to be in Level I (Pre-Gender Identity).

In order to be classified as achieving a particular level or stage, children had to answer correctly all questions and counter-questions at a particular level as well as all questions at the preceding levels. Six questions are verbal inquiries while the remaining seven of questions pertain to a pictorial transformation performed on the stimulus figure by the interviewer directly in front of the child. This scale has been used in previous research (e.g., Carter & Levy, 1988; Levy & Carter, in press) to reliably classify children into both two stages (i.e., pre- or gender constant) and the four aforementioned levels of gender constancy.

In the present study, children were classified into one of two gender constancy stages. Children who had attained personal and/or perceptual gender permanence (i.e., levels 3 and/or 4) were classified as gender constant. Children who demonstrated pre-gender identity and/or gender identification (i.e., levels 1 and/or 2) were classified as pre-gender constant.

background) was initially presented to the child the two figures presented were a large female figure and a small male figure. When the same background was again presented later in the session the size of the figures were reversed, with the male figure now being larger and the female figure being smaller.

Results

Preliminary Analyses

The preliminary analysis consisted of a 2 (sex of child) x 2 (sex of interviewer) multivariate analysis of variance (MANOVA) conducted on children's scores on the gender constancy interview and gender-stereotype attribution task. There were no significant main effects for sex of the interviewer on any of the major dependent variables, nor were there any interactions between sex of interviewer and sex of child (all F's <1). Thus, sex of interviewer was eliminated as an independent variable from all subsequent analyses.

Age related changes in gender constancy

A 2 (sex of child) x 2 (stage of gender constancy) analysis of variance (ANOVA) was conducted on children's age in months. Results of this analysis indicated the presence of significant differences between children at different stages of gender constancy, F (1, 79) = 8.40, $p < .005$. Examination of the mean ages of the children at each stage and results of a Tukey's Studentized Range test indicated that children classified as being at Stage Two of gender constancy (n = 53, M = 43.74) were significantly ($p < .05$) older than children at Stage One (n = 30, M = 49.30).

Patterns of children's gender-stereotype attributions

A 2 (stage of gender constancy understanding) x 2 (sex of child) x 2 (size of the stimulus character) x 2 (sex of the stimulus character) repeated measures analysis of covariance (ANCOVA) with children's age in months as the covariate was conducted upon the number of correct gender-stereotype attributions made by children on the size stereotype measure. Analysis of covariance was used to control for children's age, so as to get a clearer picture

Size Stereotype Measure. The sex-stereotype measure employed in the present study resembles the index used by Kuhn and colleagues (1978) with one modification; in the present study the sizes of the stimuli children saw were manipulated. The stimuli consisted of two pairs of line drawings of male and female figures. One set of line drawings was 10 x 15 cm while the other set was 5 x 10 cm in size. The two pairs of drawings differed only in their absolute size, not in their details or proportionality. Drawings were mounted individually on posterboard and presented in pairs with a large figure of one sex and a smaller figure of the other sex appearing in each pair. Eight 30 x 30 cm background line drawings depicting gender-typed activity settings, half for children and half for adults, were also employed. These background drawings illustrated four masculine activities (carpentry work, playing with a toy truck, playing football and building with blocks) and four feminine activities (sewing, playing with a doll house, caring for a baby and using make-up). Children saw a male and a female figure differing in size (i.e., one larger, one smaller) and were asked to indicate which figure would most likely engage in the illustrated activity.

Procedure.

Children's understanding of gender constancy was assessed through the gender constancy interview described above. Children's use of physical size as a basis for attributing gender-stereotypes was also assessed. The interviewer showed the child a pair of figures differing in sex and size and placed a line drawing just above the two figures. Each line drawing pictured a background setting or objects typical to the item, but no human figures (e.g., a sketch portraying dolls and a doll house in a playroom). The interviewer then asked the child to indicate which figure would play in the setting and recorded the child's responses.

Each of the eight background activities were presented twice to each child. The size of the figures during each presentation depended on the sex typed nature of the background activity. For each gender-typed background, the cross-gender-typed figure was the larger of the two during the initial presentation. For example, when the carpentry (a masculine gender-typed

of the contribution of gender constancy, per se, to children's gender-role stereotype attribution activities (for further rationales and conversations regarding this procedure see Martin & Halverson, 1983; Ruble & Stangor, 1986; Stangor & Ruble, 1987).

Results of this analysis indicated a main effect for children's age in months, F (1, 315) = 5.16, $p < .05$, and a significant sex of child by sex of stimulus figure interaction, F (1, 315) = 9.37, $p < .005$. None of the remaining main effects nor interactions reached acceptable levels of statistical significance (all F's < 2.75, ns). Simple main effects analyses of covariance with children's age as the covariate were performed to examine this interaction. Results of these analyses indicated that sex of the stimulus figure were significantly related to accurate gender-stereotype attributions for both boys and girls, F (1, 172) = 8.47, $p < .005$, and F (1, 172) = 4.28, $p < .05$, respectively (see Table One).

Further simple main effects analyses of covariance with children's age as the covariate were conducted on the sex of stimulus figure dimension. Results indicated that when the stimulus character was a male children's sex was significantly related to their performance on the gender-stereotype measure, F (1, 162) = 10.58, $p < .001$, with boys (M = 2.69) accurately attributing more gender-based gender-role stereotypes to a male figure than girls (M = 2.10). In contrast when the sex of the stimulus character was female, children's age was significantly related to performance on the gender-role stereotype attribution measure, F (1, 162) = 11.93, $p < .005$. Children's sex also discriminated between children's performance on the gender-stereotype attribution task with female figures, although it failed to reach acceptable levels of statistical significance, F (1, 162) = 3.19, $p < .08$.

Discussion

The results of the present study indicate that children's level of gender constancy, per se, does not appear to be as significant nor necessary a basis for the acquisition or attribution of gender-role stereotypes in young children. Thus, although it would be foolhardy to totally abandon the concept of gender constancy and its potential significant contributions to other

gender-typing factors (Carter & Levy, 1988; Emmerich, 1982; Ruble & Stangor, 1986; Stangor & Ruble, 1987) these data and those of a number of other investigators offer no support for the belief that gender constancy understanding alone, is an especially important component of early gender-role development (Carter & Levy, 1988; Carter, et al., 1985; Martin & Halverson, 1983; Serbin & Sprafkin, 1986).

Of additional theoretical interest was the observation that all children, especially boys, correctly identified and attributed more gender-role stereotypes based on the sex rather than the relative physical sizes of the stimulus figures. This finding, that the physical size dimensions of the stimulus did not contribute significantly to predicting young children's attributions of gender-stereotypes by young children, is in contradiction to traditional cognitive-developmental descriptions of gender-stereotype development (e.g., Kohlberg, 1966; Kohlberg & Ullian, 1978; Kohlberg & Ziglcr, 1967; Ullian, 1976; 1981).

Consistent with predictions, sex of the stimulus figure was a significant predictor of all children's gender-stereotype attributions. Of particular interest was the observation that when the sex of the stimulus figure was male, boys correctly attributed significantly more gender-role stereotypes than did girls. This finding is compatible with previous research observing that that masculine gender-role stereotypes are defined in a more negativistic (e.g., not feminine) and avoidant manner and that gender-role inconsistent acts displayed by males are viewed as socially less acceptable and tolerable than are similar violations of gender-role norms by females (e.g., Carter & McCloskey, 1984; Fagot, 1977). Hence, perhaps as a result of these patterns of responses, boys are more sensitive and aware of gender-stereotype constraints and sanctions than are girls and may attend more closely to the behaviors of same-sex others in attempting to define their own position vis-a-vis gender-role stereotypes.

Admittedly, the size stereotype measure employed in the present study was a crude index of children's attributional activities and styles. Moreover, Kohlberg did not state that perceived size differences between the sexes was the only or primary force in the development of young

children's gender-role stereotypes. However the present attribution measure afforded a needed opportunity to empirically assess one major theoretical assumption underlying traditional cognitive-developmental approaches to gender-role development. Such procedures have been suggested as essential for theoretical evolution and development particularly in the gender-role literature, although inferences must necessarily be made with caution (e.g., Carter, 1987; Constantinople, 1979; Roopnarine & Mounts, 1987).

In sum, the present pattern of findings suggest that young children are capable of gender-typed attributions well before achieving a full sense of gender constancy understanding. Moreover, contradictory to traditional cognitive-developmental views, young children's gender-typed attributions appear to be based more on the sex of a figure than on an associated physical size characteristics. Although the present data highlights important misconceptions regarding cognitive-developmental theories of early gender-role development, it would be unwise to dismiss the entire traditional cognitive-developmental view of gender-role development. Rather, future research should build upon previous empirical work while striving to more comprehensively understand the many cognitive and developmental mechanisms and processes involved in young children's gender-role acquisition and generation (e.g., Carter, 1987; Carter & Levy, 1988; Levy & Carter, in press; Martin & Halverson, 1987; Ruble & Stangor, 1987; Serbin & Sprafkin, 1986; Stangor & Ruble, 1987).

FOOTNOTES

[1]. Consistent with the recommendations of researchers in the gender-role and sex difference domains the term sex is used to refer to the grouping of people into the two distinct biologically defined groups of female and male. Gender, in turn, refers to the categorizing of individuals based on societal standards and ascriptions.

Table One

Children's Mean Gender-Role Attribution Scores to Male and Female Figures

	Male Figures	Female Figures
Boys (n = 44)	2.69 (1.24)	2.15 (1.31)
Girls (n = 39)	2.10 (1.10)	2.50 (1.30)
Younger Children (n = 49)	2.35 (1.26)	2.03 (1.30)
Older Children (n = 34)	2.51 (1.26)	2.72 (1.22)
Pre-Gender Constant Children (n = 53)	2.31 (1.24)	2.17 (1.30)
Gender Constant Children (n = 30)	2.60 (1.14)	2.57 (1.31)

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